

IN THE CLAIMS:

1. (Currently Amended) A method of measurement reporting in a telecommunication system comprising mobile stations and a network comprising base stations, wherein handover decisions upon establishing or ~~canceled~~ cancelling a link between a mobile station and a base station are made in the network on the basis of measurement reports sent from the mobile station to the network, ~~characterized in that~~ the method comprises the steps of comprising:

defining at least two by the network a plurality of parameters for the mobile station,
sending the parameters to the mobile station,

determining by the mobile station a plurality of independent measurement report triggering conditions using the network defined parameters,

monitoring at the mobile station properties of a plurality of radio signals received from respective base stations,

verifying by the mobile station whether a measurement report triggering condition has been met,

generating a measurement report comprising information about the monitored radio signals at the mobile station when at least one of the triggering conditions is has been met, and transmitting the generated measurement report to the network.

2. (Currently Amended) A method ~~according to claim 1, characterized in that the activity of at least one of the triggering conditions is defined by the network~~ of measurement reporting in a telecommunication system comprising mobile stations and a network comprising base stations, wherein handover decisions on establishing or cancelling a link between a mobile station and a base station are made in the network on the basis of measurement reports sent from the mobile station to the network, the method comprising:

sending by the network a plurality of independent measurement report triggering conditions for the mobile station,

monitoring at the mobile station properties of a plurality of radio signals received from respective base stations,

responsive to both the monitored radio signals and the triggering conditions, generating a measurement report comprising information about the monitored radio signals at the mobile station, and
transmitting the generated measurement report to the network.

3. (Currently Amended) A method according to claim 1, ~~characterized in that~~ wherein the method further comprises a step of resetting a timer in connection with the step of transmitting a measurement report, and
at least one of the ~~trigger~~ triggering conditions comprises a condition for the value of the timer.

B7 4. (Currently Amended) A method according to claim 1, ~~characterized in that~~ at least wherein one of the ~~trigger~~ triggering conditions is a threshold for a radio signal parameter or a function thereof.

5. (Currently Amended) A method according to claim 4, ~~characterized in that~~ wherein the radio signal parameter is the received power level of the signal or a function thereof.

6. (Currently Amended) A method according to claim 4, ~~characterized in that~~ wherein in the radio signal parameter is the interference in the received radio signal or a function thereof.

7. (Currently Amended) A method according to claim 6, wherein the in-a network using
uses CDMA air interface in which the connections are separated using different spreading codes,
~~characterized in that~~ and
the value for the interference is an estimate for the interference power ~~made before the~~
~~signal is correlated with the spreading code used in the connection.~~

8. (Currently Amended) A method according to claim 6 1, wherein the method further
comprises:

defining by the network the activeness of the measurement report triggering conditions so that at least one triggering condition is active and the remaining triggering conditions if any are inactive,

not performing the transmitting the generated measurement report in response to meeting an inactive triggering condition, and

performing the transmitting the generated measurement report if one active triggering condition has been met. in a network using CDMA air interface in which the connections are separated using different spreading codes, characterized in that the value for the interference is an estimate for the interference power made after the signal has been correlated with the spreading code used in the connection.

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9. (Currently Amended) A method according to claim 1 4, wherein the method further comprises:

the mobile station receiving corresponding base station specific offset values from the base stations it monitors; and

using the base station specific offset values in the step of verifying by the mobile station whether a measurement report triggering condition has been met. characterized in that the trigger condition comprises a base station specific offset value.

10. (Currently Amended) A method according to claim 9, ~~characterized in that at least one of~~ wherein the offset values is dynamically defined by the network.

11. (Currently Amended) A method according to claim 1 4, ~~characterized in that wherein~~ the one trigger triggering condition comprises a threshold for the change of a radio parameter or a function thereof.

12. (Currently Amended) A method according to claim 1 4, ~~characterized in that wherein~~ a first set of ~~trigger~~ triggering conditions is defined for the radio signals in the uplink direction and a second set of ~~trigger~~ triggering conditions is defined for the radio signals in the

downlink direction,

a logical function is defined for combining the first and the second set of ~~trigger~~ triggering conditions, and

at the mobile station, the state of each ~~trigger~~ triggering condition is determined, the states combined using the logical function, and the measurement report is sent in dependence upon the condition of the logical function.

13. (Currently Amended) A method according to claim 12, ~~characterized in that~~ wherein the first and second set of ~~trigger~~ triggering conditions are dynamically defined by the network.

14. (Currently Amended) A method according to claim 12, ~~characterized in that~~ wherein the logical function is defined by the network.

15. (Currently Amended) A method according to claim 12, ~~characterized in that~~ wherein a first combination of the first and second sets of ~~trigger~~ triggering conditions and the logical functions are defined to be used for radio signals from or to active base stations having an active link with the mobile station,

a second combination of the first and second sets of ~~trigger~~ triggering conditions and the logical functions are defined to be used for radio signals from or to candidate base stations not having an active link with the mobile station,

and at the mobile station, the first combination is used for radio signals from or to active base stations and the second combination is used for radio signals from or to candidate base stations.

16. (Currently Amended) A method according to claim 15, ~~and further comprising the step of~~ creating an active link between the mobile station and a candidate base station not having an active link with the mobile station when the network receives from the mobile station a measurement report triggered by that candidate base station.

17. (Currently Amended) A method according to claim 15, ~~and further~~ comprising the ~~step of~~ deleting an active link between the mobile station and a base station when the network receives from the mobile station a measurement report triggered by that active base station.

18. (Currently Amended) A method according to claim ~~1~~ 15, ~~characterized in that~~ wherein said two different logical functions are such that when a base station is in the active set, a measurement report is not triggered by a radio signal of that base station for the same set of radio properties as would trigger the transmission of a measurement report when the base station is in the candidate set.

B7 19. (Currently Amended) A method according to claim ~~1~~ 12, ~~characterized in that the method comprises a step of~~ further comprising defining a logical function for use when the number of base stations in the active set is equal to a predefined maximum number, and defining the first and second sets of ~~trigger~~ triggering conditions on the basis of the radio signal properties of the active base station having the worst signal conditions, and wherein a measurement report is triggered by a radio signal of a candidate base station causes that worst base station to be replaced by the candidate base station.

20. (Currently Amended) A method according to claim 19, ~~characterized in that~~ wherein the maximum number is dynamically defined by the network.

21. (Currently Amended) A method according to claim 1, ~~characterized in that~~ wherein the network informs the mobile station what information to include in the measurement report, and the mobile station includes this information in the measurement report.

22. (Currently Amended) A method according to claim ~~2221~~, ~~characterized in that~~ wherein the radio signals are ordered using a predefined condition, and in the measurement report sent from the mobile station, information about the properties of a predefined number of the best radio signals according to the condition are reported.

23. (Currently Amended) A method according to claim 21, ~~characterized in that~~ wherein the number of radio signals to be reported is given by the network.

24. (Currently Amended) A method according to claim 21, ~~characterized in that~~ wherein the measurement report comprises a value for the path loss for a reported signal or a function thereof.

25. (Currently Amended) A method according to claim 21, ~~characterized in that~~ wherein the measurement report comprises a value for the carrier to interference ratio of a reported signal or a function thereof.

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26. (Currently Amended) A telecommunication network for a telecommunication system comprising mobile stations and a the network comprising base stations, in which system the mobile stations monitor radio signals sent by the base stations and handover decisions on establishing or cancelling a link between a mobile station and a base station are made in the network on the basis of measurement reports sent from the mobile station to the network, the network further comprising: ~~characterized in that the network comprises~~

a determining means for determining a plurality of parameters for a mobile station for use by the mobile station to determine a plurality of independent measurement report triggering conditions, and independent trigger conditions for triggering the transmission of a measurement report from the mobile station and

a sending means responsive to the determining means for sending the determined trigger conditions parameters to a the mobile station.

27. (Currently Amended) A telecommunications network ~~according to claim 26, characterized in that the determining means are further arranged to define the activity of respective trigger conditions, and the sending means are arranged to send information about the activity state to the mobile station~~ for a telecommunication system comprising mobile stations

and the network comprising base stations, in which system the mobile stations monitor radio signals sent by the base stations and handover decisions on establishing or cancelling a link between a mobile station and a base station are made in the network on the basis of measurement reports sent from the mobile station to the network, wherein the network comprises:

determining means for determining a plurality of independent measurement report triggering conditions for use by a mobile station together with monitored radio signals of a plurality of base stations to trigger the transmission of a measurement report from a mobile station, and

sending means responsive to the determining means for sending the determined triggering conditions to the mobile station.

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28. (Currently Amended) A network element for a telecommunication network for a telecommunication system comprising mobile stations and a the network comprising base stations, in which system the mobile stations monitor the radio signals sent by base stations ~~characterized in that~~ and handover decisions on establishing or cancelling a link between a mobile station and a base station are made in the network on the basis of measurement reports sent from the mobile station to the network, wherein the network element comprises:

a determining means for determining a plurality of ~~independent parameters for a mobile station for use by the mobile station to determine a plurality of independent measurement report triggering conditions,~~ trigger conditions for triggering the transmission of a measurement report from the mobile station and

sending means responsive to the determining means for sending the determined ~~trigger~~ conditions parameters to a the mobile station.

29. (Currently Amended) A mobile station for a telecommunication system comprising mobile stations and a network comprising base stations, in which system handover decisions on establishing or cancelling a link between a mobile station and a base station are made in the network on the basis of measurement reports sent from the mobile station to the network, wherein ~~and the mobile stations monitor radio signals sent by the base stations, characterized in~~

that the mobile station ~~has comprises:~~

a receiving means configured to receive a plurality of parameters for receiving trigger conditions from the network for triggering the transmission of a measurement report,

means for determining a plurality of independent measurement report triggering conditions using the received parameters,

a monitoring means for monitoring properties of a plurality of the radio signals received from respective base stations,

a plurality of verifying means for which is responsive to the receiving means and for the monitoring means and which has the functionality of verifying whether the trigger conditions for sending a measurement report triggering condition of a specified type are has been met,

a plurality of report means responsive to the verifying means for establishing a measurement report comprising information about the monitored radio signals when one of the triggering conditions has been met, and

a sending means responsive to the report means for sending a the measurement report to the network.

30. (Currently Amended) A mobile station according to claim 29, ~~characterized in that~~ wherein the receiving means ~~are arranged~~ has been configured to receive at least a first and second different set of ~~trigger~~ triggering conditions for uplink and downlink signals, and a logical function for combining these sets of triggers, ~~conditions,~~

the verifying means are have been arranged to determine the states of each ~~trigger~~ triggering condition and to combine the states according to the logical function, and

the report means are have been arranged to establish a measurement report to be sent by the sending means in dependence upon the condition of the logical function.

31. (New) A method according to claim 1, wherein the measurement report is generated when any one of the triggering conditions has been met.

32. (New) A telecommunications network according to claim 26, wherein the determining

means has been further arranged to define the activeness of respective triggering conditions, and the sending means has been arranged to send information about the activity state to the mobile station.

33. (New) A network element for a telecommunication network for a telecommunication system comprising mobile stations and a network comprising base stations, in which system the mobile stations monitor the radio signals sent by base stations and handover decisions on establishing or cancelling a link between a mobile station and a base station are made in the network on the basis of measurement reports sent from the mobile station to the network, wherein the network element comprises:

determining means for determining a plurality of independent measurement report triggering conditions for a mobile station the triggering conditions being determined to be used together with monitored properties of radio signals corresponding to different base stations, and

sending means responsive to the determining means for sending the determined trigger conditions to the mobile station.

34. (New) A mobile station for a telecommunication system comprising mobile stations and a network comprising base stations, in which system decisions on establishing or cancelling a link between a mobile station and a base station are made in the network on the basis of measurement reports sent from the mobile station to the network, wherein the mobile station comprises:

receiving means configured to receive from the network a plurality of independent measurement report triggering conditions and to receive radio signals from a plurality of base stations,

monitoring means for monitoring the radio signals received from respective base stations, a plurality of verifying means responsive to the receiving means and to the monitoring means and which have the functionality of verifying whether one of the measurement report triggering conditions has been met,

a plurality of report means for establishing a measurement report comprising information

about the monitored radio signals, and
sending means for sending the measurement report to the network.

35. (New) A mobile station according to claim 29, wherein
the receiving means receives from the network information indicating at least one
triggering condition as active, the remaining report triggering conditions being inactive, and
the sending means transmits the generated measurement report if at least one active
triggering condition has been met.

B7 36. (New) A mobile station according to claim 29, wherein
the receiving means has been configured to receive base station specific offset values, and
the verifying means have been arranged to use the base station specific offset values in
verifying whether a triggering condition has been met.

37. (New) A mobile station for a telecommunication system that includes mobile stations
and a network comprising base stations, in which system decisions on establishing or cancelling a
link between a mobile station and a base station are made in the network on the basis of
measurement reports sent from the mobile station to the network, wherein the mobile station has
receiving means for receiving parameters from the network for triggering the transmission
of a measurement report and for receiving radio signals from a plurality of base stations,
monitoring means for monitoring properties of a plurality of radio signals received from
respective base stations,
verifying means for calculating link quality measures for the base stations with an
equation using the monitored properties of the radio signals and the received parameters, and
the verifying means being configured to determine using the calculated link quality
measures whether a trigger condition for sending a measurement report is met.
